

Systems Modelling for Energy Policy

Edited by
Derek W. Bunn
London Business School
and
Erik R. Larsen
University of Bologna

Contents

List of Contributors		vn
Chapter 1	Systems Modelling for Energy Policy Derek W. Bunn and Erik R. Larsen	
Chapter 2	The National Energy Modelling System: Policy Analysis and Forecasting at the US Department of Energy Andy S. Kydes and Susan H. Shaw	
Chapter 3	The IDEAS Model and Its Use in Developing the US Climate Change Action Plan Frances P. Wood and Jay C. Geinzer	31
Chapter 4	MIS: A Model-based Macroeconomic Information System for Energy Analysis in Germany Claudia Kemfert and W. Kuckshinrichs	47
Chapter 5	Benefits from Electricity Trade in Northern Europe under CO ₂ Constraints Tomas Larsson	67
Chapter 6	Energy Planning and Multi-level Optimization: The Australian Energy Planning System Optimization Modelling Study Sardar M.N. Islam	79
Chapter 7	Application and Limitations of Annual Models for Electricity Capacity Development Poul Erik Grohnheit	89

vi_____Contents

Chapter 8	Energy-Economy-Environmental Interactions in a General Equilibrium Framework: The Case of Turkey Y. Arikan, C. Giiven and G. Kumbaroglu	117
Chapter 9	The Economics of the CO ₂ Problem: What About the Supply Side? Jürgen E. Blank and Wolfgang J. Strobele	141
Chapter 10	Exploring Oil Market Dynamics: A System Dynamics Model and Microworld of the Oil Producers John D.W. Morecroft and Brian Marsh	167
Chapter 11	Diary of an Oil Market Model: How a System Dynamics Modelling Process Was Used with Managers to Resolve Conflict and to Generate Insight David C. Lane	205
Chapter 12	The Changing Role of Simulation Models: The Case of the Pacific Northwest Electric System Andrew Ford	241
Chapter 13	A Systems Simulation Platform to Support Energy Policy in Colombia Isaac Dyner and Derek W. Bunn	259
Chapter 14	Preparing for a Competitive Environment: Developing Strategies for America's Electric Utilities James M. Lyneis	273
Chapter 15	Complementary Modelling Approaches for Analysing Several Effects of Privatization on Electricity Investment Derek W. Bunn, Erik R. Larsen and Kiriakos Vlahos	303
Index		327